The greatest pleasure can only happen when two become one
When outer becomes inner
And inner becomes outer
When I become you
And you become me
When pleasure becomes pain
And pain becomes pleasure
When this knows not that but that
And that knows not this but this

I sustain myself so that I might convince
You to become me so that I can become you.

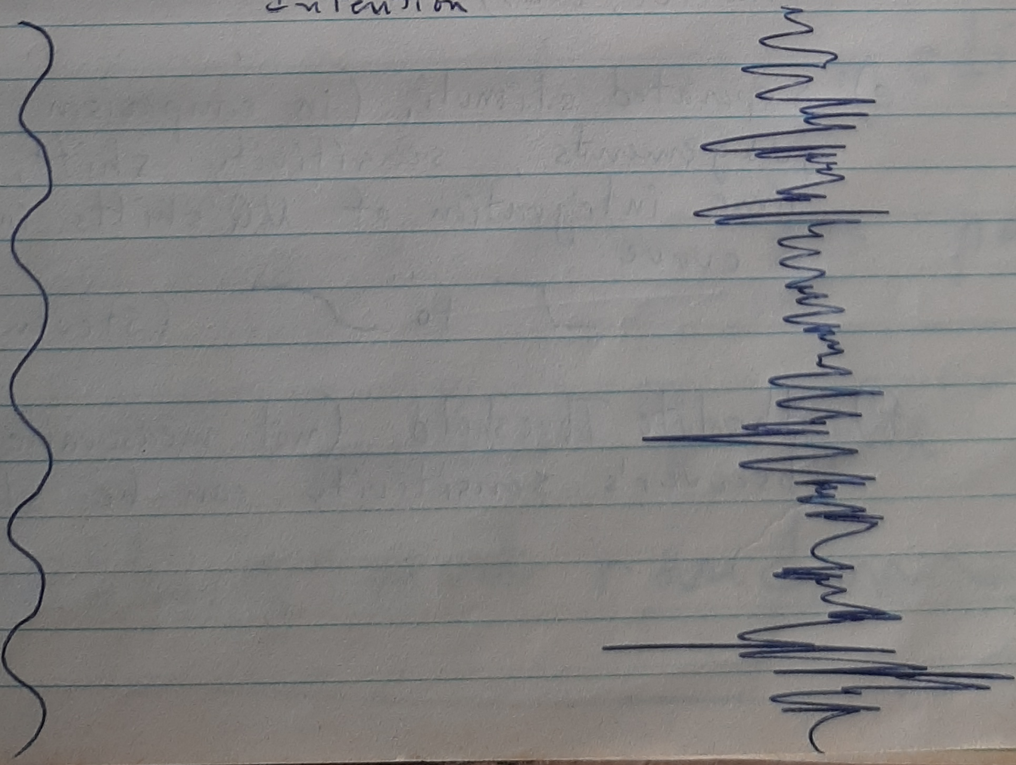
Can I be myself and all of you at the same time.

If I am me today and you tomorrow I am
you today and me tomorrow because past and
future are all present.

How can I make things that are incomplete
So that you can come along and complete them.
You and I must both be incomplete to need eachother.

I imagine the pleasure of being you and you
being me, thus I continue.

Intention



extract some musical form — exercises this

Regularity
left hand ostinato
symetry
direct time line
drone
Goal

Noise
right hand roving
no image/meaning
random time
chunks from
everywhere
no goal

Goals and noise:

Noise ~~increasing~~ which degrades redundant stimuli increases effectiveness of learning and decreases reaction time over that with nonredundant stimuli.

Sources of noise in an S-R situation:

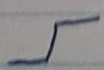
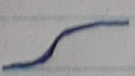
a) Stimulus jitter

b) Observer's criterion (certainty of change, subjective thresholds, etc.)

c) Changes in NQ (drugs, spontaneous firing, AGC, arousal, etc.) Random or cyclic changes in firing threshold? Habituation, etc.

d) The Observer (concentration, exhaustion practice, etc.)

e) Separated stimuli. (in comparison judgements, sensitivity shift, etc. time integration of NQ's shifts into S curve

 to  (Stevens)

f) Absolute Threshold (not measurable unless observer's sensitivity can be stabalized.)

information processing.

An attempt to condition autoregulation of the ERG with biofeedback and note changes in visual information processing.

Phase synchronicity in EEG, what does it mean for neurological models?

Condition AER latency and check relation to reflex speed.

☆ What is the place of nonverbal communication in the scientific method. (Course for Scientists)

{ Would a study of apparent regularity perceived by S in a stimulus chain which contains a calculated order-disorder relation be of use in an investigation of temporal pattern perception.

Record eye movements of subjects looking at paintings

A useful endeavor for sciences:
Demonstrate that the same electro-chemico-physiological parameters and methods account for recognition of "imaginary" and "real" stimuli.

"Don't worry with existing or new models; deal directly with the experience of ones self electrophysiologicaly.

Is noise responsible for differences in identical twins.

Noise: spontaneous firing of neurons - possible AGC circuit. (Deutsch p. 91)

Presens of noise in the form of continuously variable firing thresholds.

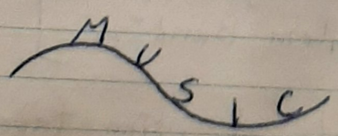
Relate findings in noise study to sensory deprivation. Are they different?

Noise as an activator of thought processes.

Goals are, of necessity, tendencies to nonrandomness.
Goals ⟷ the Mean
Achievement ⟷ the Variance

Shapiro's clock - must study.

Is symetry an unsuccessful endeavor?



Is Bandwidth a factor –
Spatial changes in bandwidth

Waterfall Phase changes
extremely dramatic – motion
Tactility of the air – Dancer
moving through jello.
Noise power equalized over
four channels at -10 db on
-10 db meter setting –
Wet! / rug-stepping on soggy moss
Random low thumpings
big splashes. (The answer for
slow motion dance. Make them
dance in a dense medium.)

How long a time has passed?

(Alpha – presense of alpha makes
feedback more random.

Can locate everybody in the room ., and every object.

Areas of fast tonal passages depending on attention.

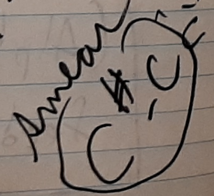
High frequency energy makes the location possible.

Can hear spatial holes in the block (marble) of sound bounded by the room.

Many sharp attack sounds (bells) fast. Always slow random throbs.

Strong middle B moved to C#

Amazing low power.



Make good 206 tape of white noise and take home.

Directionality of high frequencies — (speakers)

Physical locations

No, I think it's high frequency rebound, not absobtion. (SC standing up).

Applause — 80 Spiro Agnew w/ witches
Big popcorn

Control and arbitrariness
Pulsness of turning off

no time

(noise as individual pulses anyway)

— Summary of Reactions —

Hearing tones then deciding they weren't there!
(taking or giving energy) (trusting what you hear) (wind, you or me) ([redacted] Threat)

High energy situation (waterfall, tap pressure, tires on wet pavement, escaping gass, etc. high winds, rush

Hearing? pulses

Textures (thick)
Heavyness
Dark
Traped

vs fire, light, changed

like dreaming

Dramatic visions (people clapping) (animal mouths

Recall of Past Situations

Confusing vs soothing (not knowing which to do)
(thought I could look into myself but when I tried I couldn't)

liquids — body fluids? (why have such meaning)

Too many images? (manufactured or not)

After images

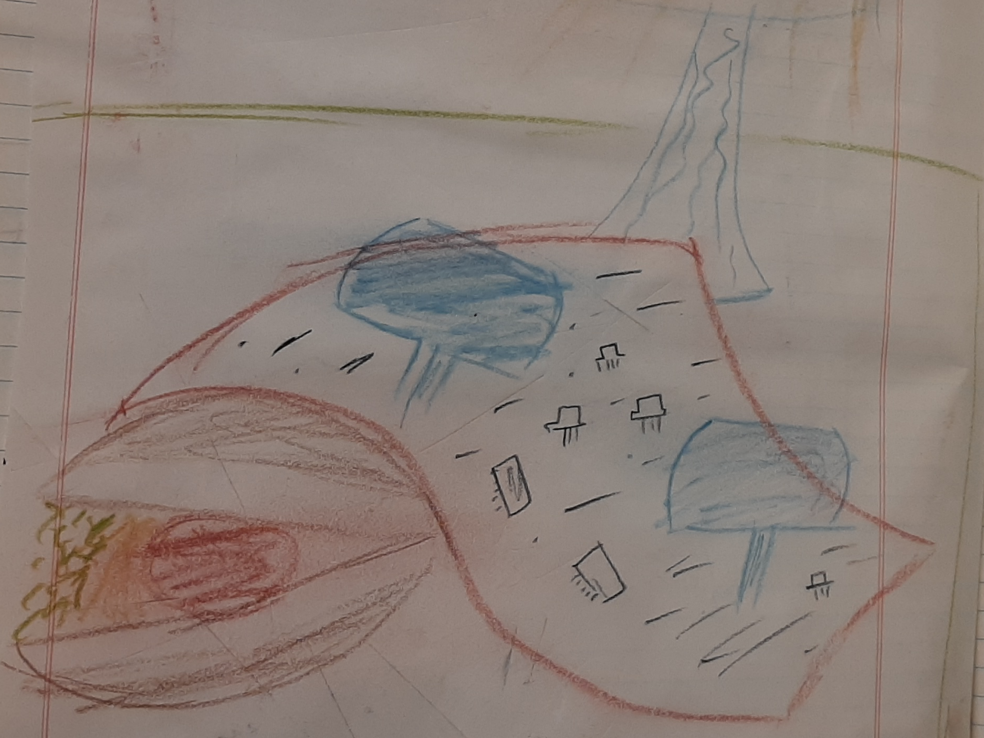
Physical parameters — tonal centers, locations, separating physiological locations grouping, into bands (musicians) pitches

Purpose — desire to hear something

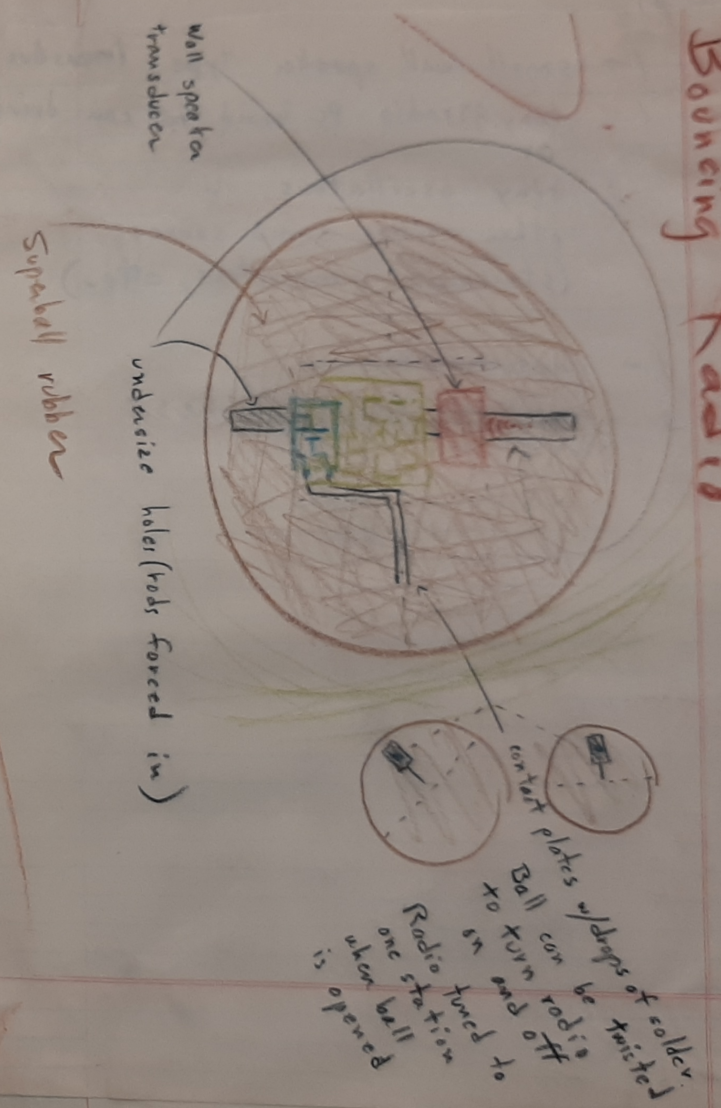
Control — (controlling the richness and physical parameters perceived) manipulation

Feeling without hearing (HS) located in head)

Flexible Radio w/ Big Satin Knobs



Bouncing Radio



Probablistic memory development theory starting from zero entropy.

Any heuristic system needs an influx of information to maintain system life.

Sensory input
(In the form of physical representation of nature)
↓
Heuristic System --→ no physical waste byproduct
(Beginning with zero entropy)
↓
Information Output ---→ No physical waste byproduct
↓
Conversion to physical representation of nature —→ Physical waste byproduct

Energy → Sensory input; Energy → Heuristic System; Energy → Information Output; Energy → Conversion to physical representation of nature

---

Energy → Heuristic System → Information
(No waste)

Matter state I
↓
Conversion with aid of information
↓
Matter state II

} Waste byproduct

Information = representation of physical world.

Information flows through physical system.

Level of existence raised to that of pure information w/no need for real interaction with physical world, thus, no waste.

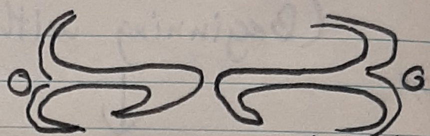
The World's people are talking to their own egos rather than to eachother.

Philosophy of Resonance

Vibration depends on elasticity
↑
uncertainty of s-t coordinates (Cartesian)

Information processing by paradox discovery.
The material universe (spatio-temporal constructs) may be a result of the application of inference

Elastic Sculpture



Complementarity

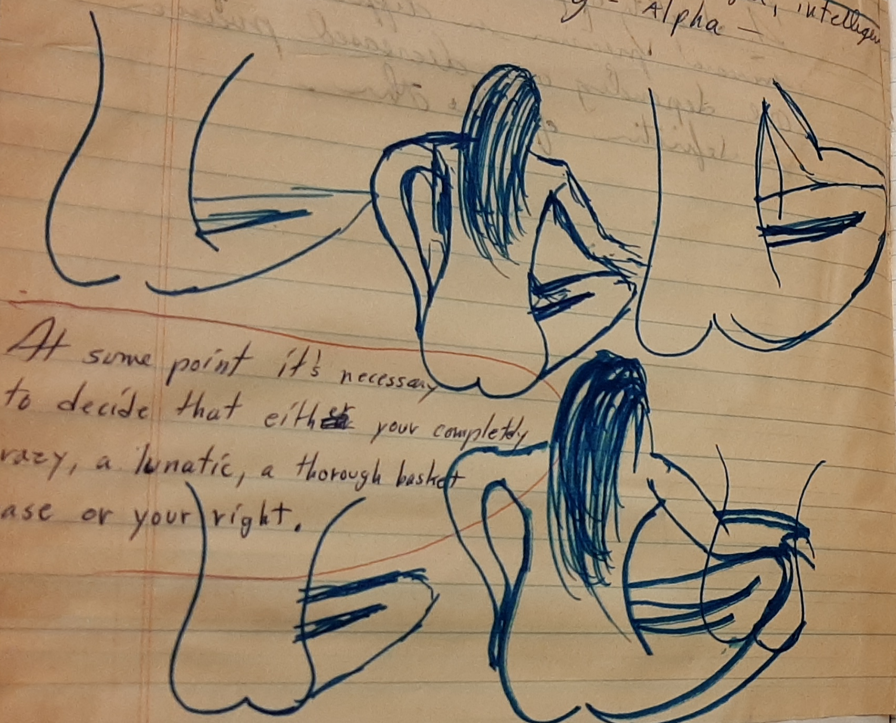
Research aims → processes may not be observable in a way permitting description in classical terms.

The universe's capability to organize, observe and store information about itself, and in so doing, evolve.
The universe may not exist prior to our consciousness of it.
New arrangement of universe resulting from new concept

"Life surviving on Life" is not a necessary characteristic of the universe, (physically - chemically).
Is man curving the universe with his measuring tools, (...
Is life a consequence of a certain stage of super organization.
Ontogenetic evolution only occures in higher organisms
The lower down in evolution, the greater neg entropy the less need to maintain viability.
At what level does "drive" appear?

//

Zen term, "munen" – nonthought, intelligence – action w/out thinking – Alpha –



At some point it's necessary to decide that either your completely crazy, a lunatic, a thorough basket case or your right.

Experiments: Dependence of recognition on symetry

Look for (quantum) complimentarity processes in psychology & perception. A duality of parameters, the increasing precision in deffinition of one depending on decreased precision in deffinition of the other

Non interference from intake of supplies
No fixed forms
Trial + error over time
Perspicuity
Intentions
Homogeneity ⟺ Entropy
Computer rational: Abstract design facilitation

Retrieve & compare

Sleep – memory clearing of the nonessentials, turning off of will, thinking

to allow patterns not that will, might in otherwise sewage organic

Point of simple awareness with unawareness to their action in will full opposing maintenance & ontology from destroying itself – during memory movement towards more natural pressure in facilitated

STM

Alpha + subconscious information processing / automatic process in subconscious

Check entropy of brain alpha patterns

EntropicBioFeedback

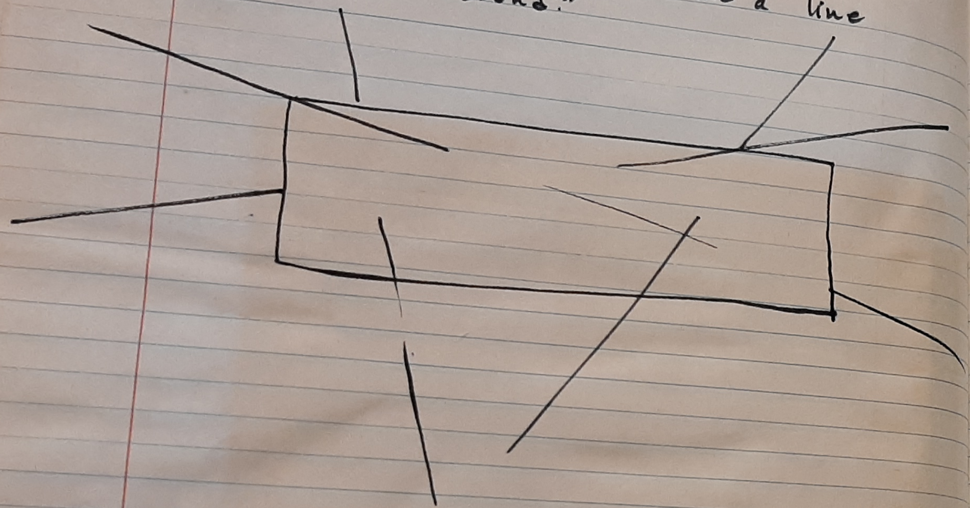
proceed with – memory – brain patterns

DNA – ordealings

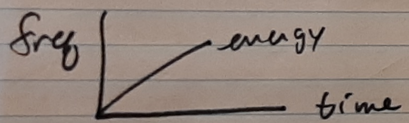
proceed

What operator

Bob Erwin – "Can you draw me a line with sound?"



Lines: ultrasonic beam interference (solid sound lines)
spatial psychoacoustic effect
(point source enscribing a line)
Subjective sound block lines
w/fibers
Ultrasonic sound fiber that moves



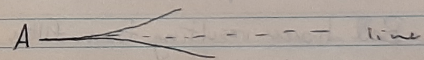
List the abstractions missing from ~~[illegible]~~
Polaroid perception.
Presence

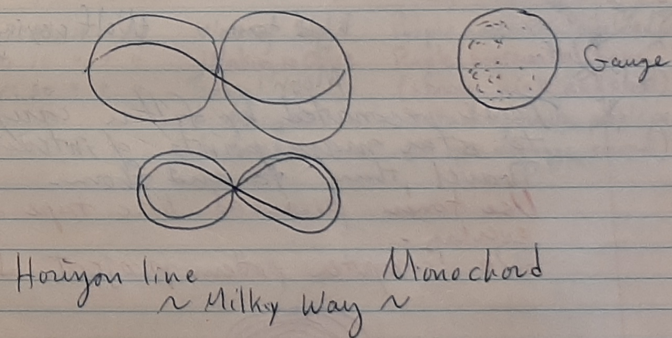
A concept for the design of my performing instrument is that it is capable of conducting research.

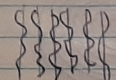
{ The presentation of goal seeking design behavior or search, for view by other minds (audience), is a basis for style (art + performance).

Self-designing behavior.

To obtain an overview of a system, is it necessary to be outside that system?







The instrument, in order to be useful, must be able to correlate between EEG outputs and sentic states and outputs so that a translator may be built. Essentic form

Piece for STEREOPTICON:

Use Epiece pattern from December tape with new melodies

Slow modulation of harmony like a turtle's Bach choral.

Guideline: "To spend more time in the condition of learning and less time watching the baggage." "To learn more and know less." Robert Ashley

Is it true that, (as R.A. says); "Designs based on endurance parameters have no relevance in the electronic world: breath/ preassure/ metabolism/ weight/ etc."

Is the promise of liberation in graphic symbols largely exhausted?

Are we still trying to reach the inexpressible through exercise of the expressible.

If you can always get what you need from your environment, no problem. If not, take your environment with you. A good answer?

> It is easy to find already existing sounds that will nourish our intentions. Should we not then relieve our expression of the authority of intention which makes it boring, (ie. the truth was known before we heard the news), in compromising the inexpressible with the expressible.

"Consider every work to be an attempt to describe something other than music." R.A.

small group assignment

If this is crisis time, then, information systems and art must conserve for the present, (ie. not expend for the past), and only communicate changes in states. We do not need to be told of the present condition, (ie. authoritative intention).

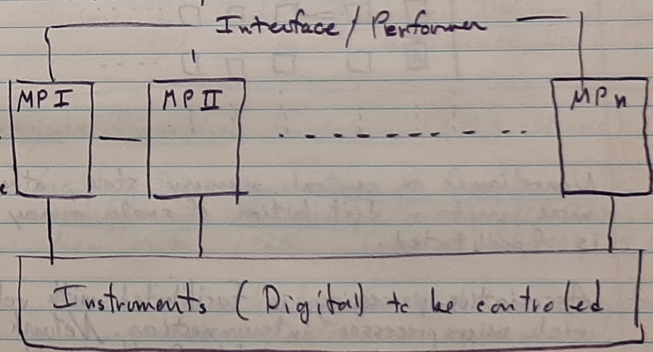
Instrument specifications:

Possibility A - use microprocesser (INTEL 8080) for each instrument.

Multilevel program communication from microprosser to microprocesser to ... etc. ... is essential.

Consider parallel processer models (ILLIAC IV) for microprocessers.

Each MP can do separate job, simultaneously. ROM's can be used to optimize each instrument and RAM's for recognition and storage, (ie. early and late evoke response correlation and Fourier analysis measures).



Parallel processing models

Holland, John H.: A Universal Computer Capable of Executing an Arbitrary Number of Subprograms Simultaneously, in Essays on Cellular Automata, Ed. by Burks, A.W., Univ. of Illinois Press, Urbana, 1970, pp. 264-276 - Also, Iterative Circuit Computers, pp. 277-296.

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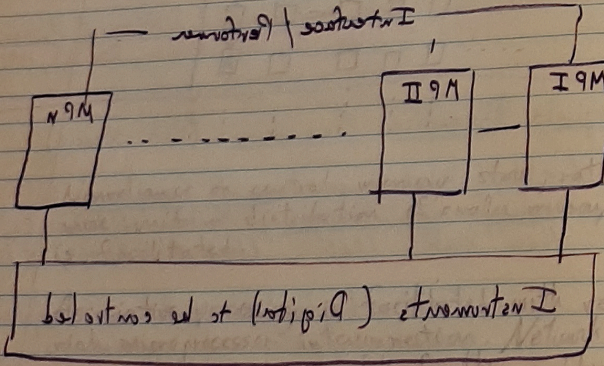
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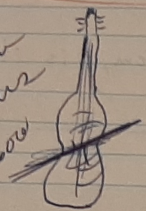
Also, feedback of specific shapes is necessary in order to maintain states or explore within new states.

"Proto-sentic states"

Exploration of pre-sentic self,

It is time for a careful analysis of the usefullness/danger/benefit of this type of pursual.

Use double finger repeated note organ technique pattern or bouncing bow patterns



Patterns from Todi + Ply Rock Vida

Try filter experiments

Bell drones resulting from filter ringing

Wolf tones - Wolf crying

Moon

Tones resonated by filter corresponding to star map points of interest. Travel, then, to and from.

Use tones produced like tape delay overlap.

Do computer pattern project definitely.



Star patterns as control for permutations

J.B.

Use D piece

One week's record of Phosph[...]udene checks.

Condition	Time/Date	Activity	Description
[redacted]			
Drunk/Tired	11:30 Sept. 15		
Uptight trying to work	1:30 " 16	Taking Shower	
Stoned/motivated but slightly blocked	2:45 " 16	Reading	Orange color fields (minimal audenes) Green-Orange w/amorphous purple shapes
Having fun	3:20 " 16	Driving Expressway (passenger) Car riding	Green/many small particles/active bright moving speckles (only highest audenes)
" "	4:45 " 16	" "	Green w/speckles now in horizontal lines (stronger but faint high audenes) Expanding purple circle patterns 1 2 3, green background
Tired	11:05 " 16	Preparing for bed	Uniform violet field Strong audenes w/peak around 5kHz pulsing (5/sec.) [redacted] 1800 Hz full midrange and supersonic clusters, dense.
Dreamy	7:20AM " 17	Waking Up	Purple concentric circles (only highest audenes)
Scattered	10:10 " " "	Working in Office	Purple horizontal bars (strong high audenes)
"	11:30 " " "	Teaching/ Listening to LaMonte + Marian	Scattered granular purple patterns (FM upper midrange sound)

Rosenblith, Walter A. (Ed.): Sensory Communication, The M.I.T. Press, Cambridge, 1961.

Examples of auto + cross-correlation in CNS:

a. Reichardt, Werner: Autocorrelation and the Central Nervous System, in above, pp. 303-317

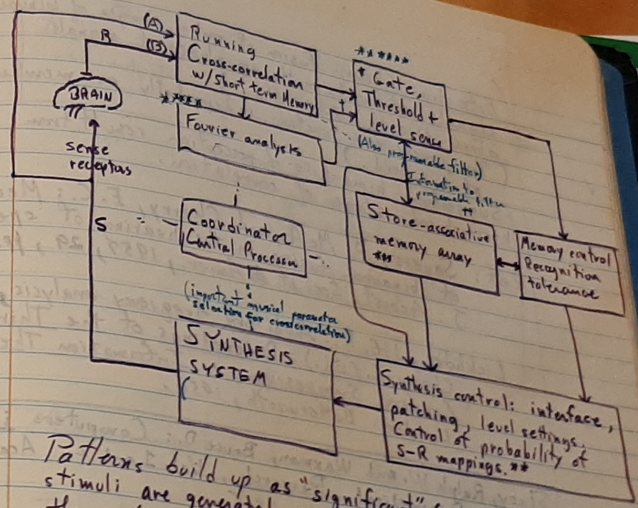
☆→ b. Cherry, Colin: Two Ears - but One World, in above, pp. 99-118.

The brain may use several different storages for different averaging times in order to "fuse" images.

White noise "hallucination" effects could be explained by the "running correlation" model of Cherry. Cross-correlation of white noise signal with an existing "electronic brain hollogram" will reveal stronger and weaker correlations if the time integral is short enough and noise signal fluctuations chance to correlate with some pre-existing wave shape built up from experience. Correlation waves and output releasing comparison criteria restrictions are set during the course of normal daily life. (see earlier thoughts on memory algorythms, reconstruction tolerance, etc.).

Instrument:

- stage I - nothing is happening
- " II - arbitrary test - randomly chosen stimulus
- " III - test for significance of reaction - threshold
- " IV - Try again
- " V - Test
- " VI - Response crosses threshold by x amount
- " VII - Store waveform w/ f(x) reconstruction or recognition tollerance.
- " VIII - Signal influences synthesis depending on its



Patterns build up as "significant" (ie attention securing) stimuli are generated, at first by chance. Behaviors of the system build. Extinction of a particular pattern is also possible by the brain which simply ignores what it does not want.

†† Combination of analyses and waveform comparison system constitutes a programmable filter. Input must have right frequency content for Fourier output to have peaks in the correct places for recognition.

† Could also be programmable filter - using Fourier analysis

* Functions like thalamus, Judgement mechanism

** Reinforcement changes probability of occurance of specific output patterns. Extinction is functional as well.

*** Stores correlation patterns that exceed threshold. All incoming patterns are compared to all stored patterns. Repeated releasing of a particular pattern from memory reinforces a particular patch or synthesis program.

**** The information from the Fourier analysis can extract frequency distribution of the signal in order that the system can construct a filter to extract exactly that waveform from new inputs for feedback purposes.

***** Possibly peak-to-peak amplitude and latency measurement + storage (see 3 pages back)

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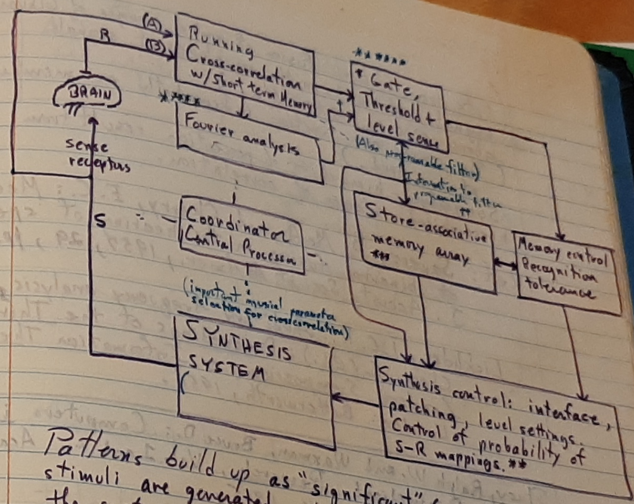
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Listen to tape delay of white noise,
(tape delay autocorrelation).

Exercises:

~~[illegible]~~

1. ✓ Try to draw a random curve.
2. Try to make a mark that has no meaning.
3. Think a random thought.
4. Try to play a random sequence of notes.
5. Take a random walk

Sentic cycle → Musical composition: (1965)
"Endings" (40 Beethovenian endings in a row saturate audience expectation)

Exercise on Sentic Cycles

Study relation of Clynes' "Fantasy wave" and John's "endogenous components"

Document church piece w/ strobed stained glass windows — Mother church etc.

Medtronic: Vancouver Piece
Music instrument

Drawing
1. Room — Vancouver piece & sound works
2. Installation — music machine

Portable music &/or drawing instrument

Reflex — motor action — synchrony

Continuous comparison — recategorization — recomparison of everything in memory is an ongoing necessity for the instrument. It must always search for the best (data reduced) description of its current information — reduce uncertainty.

Don't waste computer time producing static events — conserve processor power by having it only deal with __changes__ in states.

↳ ∴ [Digital CPU] → [Analog system for repetitive or composite periodic events]

Need
- Cross-correlation
- Auto-correlation
- Fourier tracks
- Time interval histograms
- Capability to handle probablistic adaptation programs
  - See program on yellow page.

Estimates of future importance →
→ Reconstruction tolerance
Sentic evaluation programs

Think about moving away from reliance only on __central__ memory store. Too inefficient.

Power source — ?

Entropy measures

Analog processes:
- Threshold measures
- repetitive events

Positive comparisons can reinforce particular patches in synthesis system — with synthesis system carrying on with sound production — then more detailed parameters can be set if patch is continuously reinforced — saves processor time/space.

(Or uptakes),
in
c Cycles
of subjective

External

Exogenous
afferent,
stimuli,
etc.

When one develops a model that accounts for all
his breadth of universe experience, how does he
communicate about it in such a way as not
to inhibit others from discovering it, and, therefore,
seeing more of its beauty than if they were permitted
with it? What is the necessity of others seeing
it as does a self. "Self and other."

My consciousness is something which can make use
of my brain and its n-dimensional holographic
quantal pulsation (a time dependent term), but when
my consciousness is not activated or slips, my
particularizing, space-time localization-concentration continues
right on running by itself and events are experienced, but not by
an I.

Music as a medium of abstract stuff should
be able to deal with things in
these spheres.

Relating to others about these things in such a
way as to help them participate in evolution is for me
what communicative music is all about.

Problem: to help raise level of consciousness, ie,
facilitate participation in dynamic patterns of evolution
and appreciation of growth of
effective action proceedures and freed seeing of
events in ways unfettered by conditioned conscious,
the complete awareness of and achievement of a perfect
balance (for the individual in a responsible social context)
between differentiated and nondifferentiated consciousness,
without indulging in obscurities of some elements
of popular musical language (the value of mysticism
without the veils of mysticism).

Rhythm — useful for growth of pattern & form —
funk — popular communication and commandeerie,

Books: London (1974)

Berger, John: Ways of Seeing, Penguin + the BBC, 1972, London.

Cole, Hugo: Sounds and Signs, Oxford Univ. Press London, 1974

Cont'd from previous page –

– problem – hypnotic – does this contribute to introversion and subsequent blindness to all (internal-external and internal-external boundary shifts, expansions-contractions) self and non-self universe aspects.

As Astley says: "To spend more time in the condition of learning and less time watching the baggage." (knowledge).

The problem is, how to communicate, a basic desire I feel personally, about aspects of consciousness that I feel embody important ground for evolution, which, we believe, are essentially noncommunicable.

Is this idea of the noncommunicableness of these concerns an unnecessary preconception.

When I find phrases or combinations of words or elements of languages that seem to embody a great deal of the substance of these aspects of consciousness exploration and use them I am severely criticized for repeating "formulations" or catch phrases,

Spontaneous generation of language elements and even syntax seems necessary to solve this problem. The creating of spontaneous simultaneities, the allowing for meaningful synchronicity, as a common recognition function for two or more living aggregates or non-entropic entities, is a basic drive of soul (my soul). This in contrast to the problem of "formulation" or repetition (allowing for the quality of sameness to be recognized) as a contributor to boredom. Is it a degenerate quality of some new music concerns which can not allow for repetition, (newness junkies, don't want to hear any note more than once), (versus one note played continuously, which cannot be considered to have occurred within the realm of language from which arises the concept, "once").

This

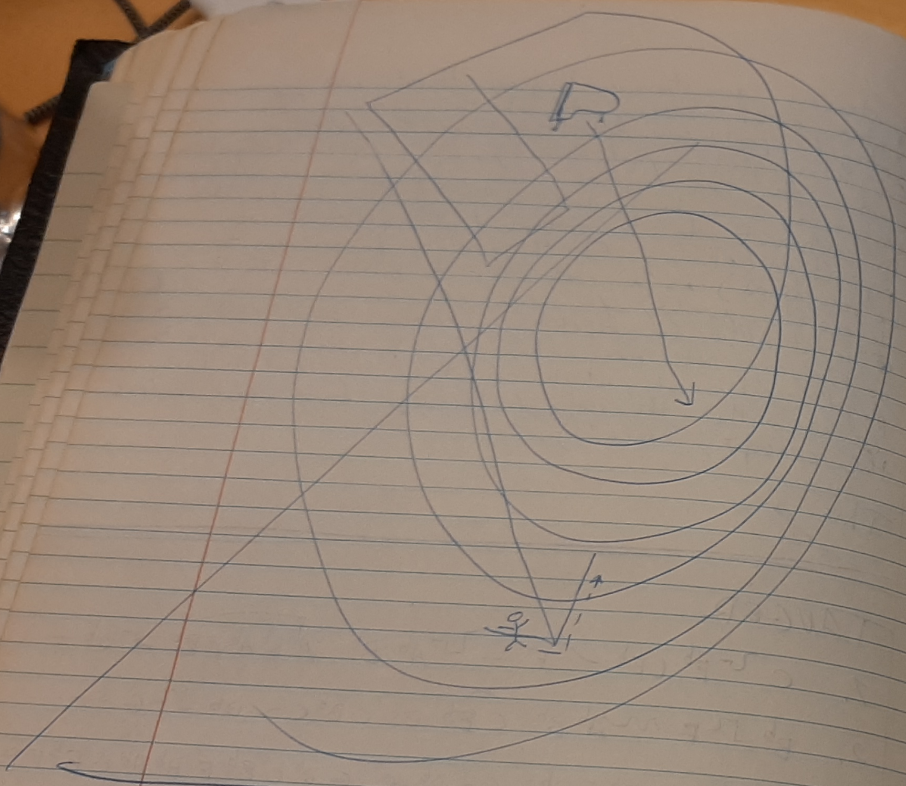
TANGER

1. C ~ E♭ C E♭ ~ F — ~ A♭ B♭ A♭ B♭ A♭ F E♭ ~ B♭ —
2. B♭ ~ F ~ A♭ B♭ C E♭ E♭ C B♭ C ~ B♭ ~ G —
3. F E♭ ~ F E♭ F E♭ C ~ B♭ ~ C G B♭ C E♭ F B♭ A♭ C E♭ F F E♭
   D ~ C
4. G F G F G ~ B♭ G F G F G ~ B♭ B♭ C C D E♭ ~ ~ D C

etc. modular "alap" lines for superimposition with only implied rhythmic reference, (but a very solid reference). Low drums – swing – piercing voice – double with strings.

Same with 3 or 4 different 4th intervals –

(Ex.) C F1 C F1 F1 G F1 C F2 C F2 C F3 A♭ F3 A♭ ~ B♭ ~ F1



Try modal practice of changing tuning of various intervals for emotive changes.

6 4ths – mode
4 minor 3rds mode
" " etc. ——

Tuning systems – put all into computer memory of instrument

Danelon – tuning catalogues in computer

Memory tapes with banks of [illegible] material –
Patterns – trills ——

Discussion w/ Jackie & J.B. About State of Art & Music. Train to Madrid from Algeciras, 27 Dec 1974 –

Original vision of the Cyberneticists as being pure and worth further consideration, though their models are too simplistic to apply to current politics and societal dynamics.

J.B. – New art will embody precision + [illegible] development of tradition

Jackie – Antagonists view – very involved with the distance between conceptual thinking and life of the Moroccan peasants.

Einstein was able to concieve of his work and carry much of it out with no support and no resources, much like the Moroccan peasant. Accessibility to literature might be one difference, Einstein was able to study, though on his off hours from work at the Patent Office.

The purity of the cybernetic vision: One can come to an understanding of the usefulness of systems, (not ubiquitous), the methods of their generation and discarding, without the emotional (limbic system) attachment (see Govinda) that produces tradition; that which we have revolted against because it obviates the possibility of discovery and, therefor, one of the most important aspects of personal growth.

The vacuousness of the early 70's; WE CAN DO ANYTHING, THEREFOR, WHY DO ANYTHING? (The legacy of 19th century Romantic Fucion?) We need much more study.

~~[illegible]~~ To make a spontaneous statement like that we must be in a condition of spiritual infancy that is deeper than we can fathom. Do we only do things that break away and therefor ~~[illegible]~~ fulfill us. Where is the positive spirit of development of self the polishing of the jewel of the self, as a motive MANI for progress.

WE CAN DO ANYTHING, THEREFOR, WHY DO ANYTHING? (The most succint statement of the psychological condition of the 70's of times)

Economic chaos follows psychic chaos, not, (usually), vice versa.

It might be worth the systematic (see Lilly for an understanding of the word, "systematic") development of political thinking based on these ideas.

Try making some pieces which explore the possible methods of implementing political processes based on this (as high as possible) thinking.

(POLITICAL EXPE

PIECE NO. I

I Technical Aspects

Use Brown Article as outline of process of biofeedback learning

Talk about experiential part.

(use for [illegible] 2nd edition.)

This is a lecture in three parts about biofeedback and the arts and processes of neurological referencing of types of aesthetic experience. I will attempt to deal primarily with the experiential side of this work, which has been carried out over the last several years, making references to the complex technical aspects, the development of which has absorbed the best energies of a team of researchers at York University, whenever necessary. The three parts of the talk closely mirror the primary experiential emphases of the several stages of historical development of this work, in which I have taken part. Each will be accompanied by certain philosophical remarks which are of greater importance than all of the complex technology involved.

Stage I

Departure from the Social

Initial infatuation with the breakthroughs of biofeedback research was due to the significant potential of making direct physical connections between an externally generated product (such as musical sound) and internal experience as represented by the electrical output of the brain. Through much technical research this has now been accomplished. and the amount of information, either of general or specific types, that can be extracted from these electrical signals is quite astounding. However, in the process we have learned much about the relationship between sensory experience and these externally manifested waveforms but have had to completely reopen questions concerning aspects of subjective experience, states of mind, and their relationship to these signals. For those who cling to rigid notions of causal chain modeling and a fixed isomorphic mapping between internal and external events it has been difficult. ~~In the end~~, In order to maintain this way of thinking ~~as ubiquitous they will~~

middle paragraphs from Invisible →

have had to define the body, the brain, and all of its electrical manifestations as external and say we have progressed no further in establishing direct connections between internal and external experience.

In the early stages of this work we began by dealing with the brain itself as an input. We started our observing process with a brain-event and not, instead, with an event outside man. This was an inherently nonsocial position, though, a necessary first step. It meant there was a concentration on the internal experience of the individual in isolation from external influence. A necessary focusing which, by nature, means isolation.

To exercise and etc.

1.) X process from now on

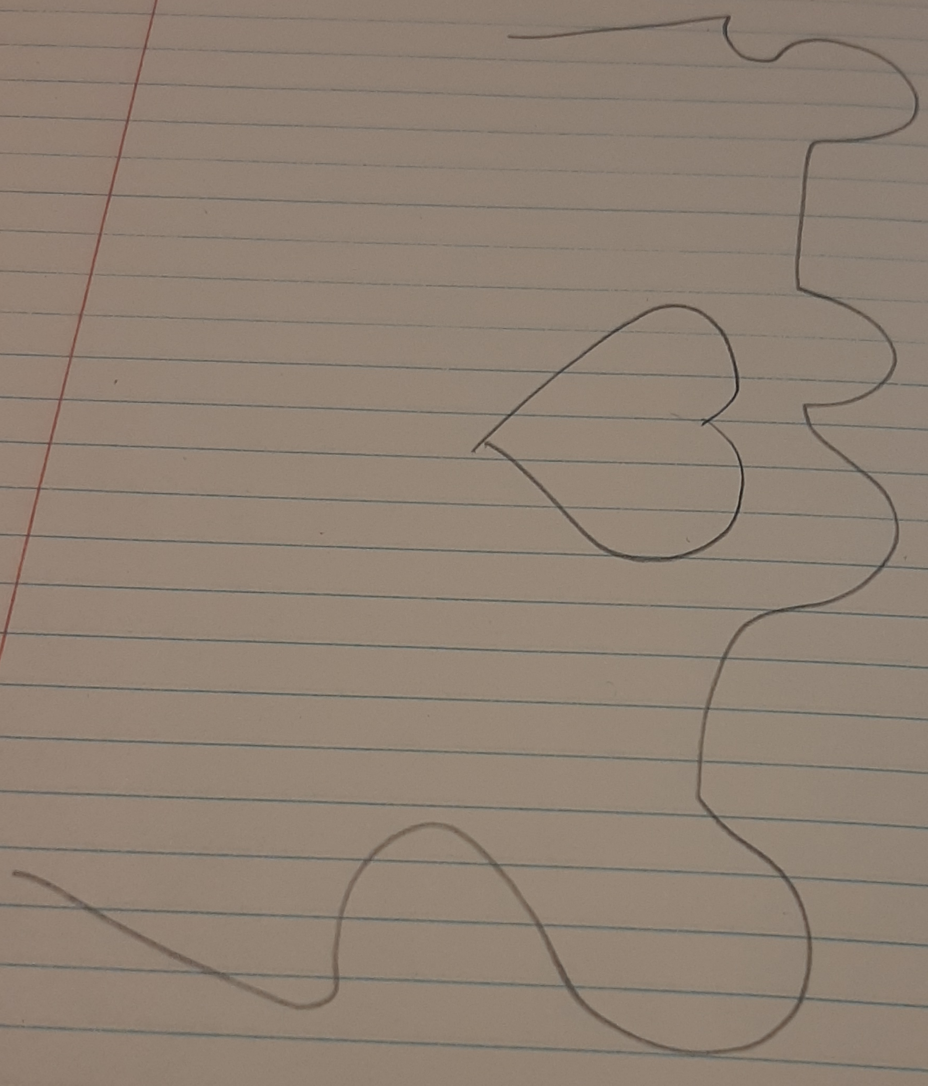
noise experiences (list internal exploration activities & show typical waveforms associated w/ each)
go into Imagination in last section

1. direct inside connections relation of alpha to certain already existing states. However what is the state?)
(i.e. those things
2. really exploring the self — not just showing relation between something & alpha

3. Imagination itself
Group shift internal → external stuff etc.

Slide List

A. Entrance slide
1. Alpha-Theta-Beta (frequency chart)
2. EEG chart showing alpha while imagining music
3. Ecology of skin diagram
4. Photo: person w/small monitor
5. Photo: view of setup
6. Photo: Cerebral light show
7. Photo: Cerebral light show
8. Diagram of feedback with BPF
9. " " dual feedback "
10. " " " " "
11. Impulse generators } Portable Gold lead in
12. Hollophone " (more complex)
13. – 18. } Vancouver piece (Optimum environment for communion w/ the self and first step towards reunification w/the social.
19. Typical AER for presentations of
    A. 440 Hz sine
    B. 880 Hz sine
    C. Change in Timbre of constant pitch
20. 2 Charts: A. Stimulus presented but missed (early components)
    B. Stimulus expected but not presented (late components)
21. 2 Charts: A. Stimulus actually presented (with large component showing active higher processing)
    B. Stimulus imagined (peaks in 2 charts appear in nearly the same places, though the waveform is smaller)
22. Third imagination/real waveform pair (showing correspondence of many components (here primarily late components are active again showing S is not passive but is actively processing stimulus.)
23. – 29. } Lab diagram and photos of equipment w/ Richard
30. & 31. Typical X-Y plots
32. – 35. Tai Chi Alpha Tala (Barbara)



...uce — Very important discussion of time + human cycles — Should study for scheduling of activities - timetable - design of practice techniques, etc. —
Survey writing - not scientific papers

Brown — Biofeedback, but concentration on therapy and medical uses — psychotherapy —

Ferguson — Good reporting of everything but nothing in depth

Lilly — Excellent example of systematic study of one inner space - subjective science - LSD

Scientific American — Excellent nuts and bolts but not the vision of Altered states Good for learning the technical language, though.

Tart — Incredible in depth - less graphic nuts and bolts. Not quite up to date

White